AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (previously presented) A video quality assessment method, comprising:

matching, by execution of a computer system, sub-field/frame elements of a test video field/frame with corresponding sub-field/frame elements of at least one reference video field/frame, and thereby generating for the test video field/frame a matched reference field/frame comprising the sub-field/frame elements of the at least one reference video field/frame which match to the sub-field/frame elements of the test video field/frame;

positioning, by execution of the computer system, in the matched reference video fields/frame at least one of the matching sub-field/frame elements to compensate for misalignment between at least one of the sub-field/frame elements of the test video field/frame and the at least one matching sub-field/frame elements; and

generating, by execution of the computer system, a video quality value in dependence on the matched sub-field/frame elements of the test and matched reference video fields/frames so as to reduce the adverse effects of sub-field/frame misalignments between the reference and test field/frames.

2. (previously presented) A method according to claim 1, wherein the matching further comprises, for a sub-field/frame element of the test video field/frame, searching for a matching sub-field/frame element within M1 preceding and/or M2 succeeding reference video

fields/frames to a temporally corresponding reference video field/frame to the test video field/frame.

3. (original) A method according to claim 2, wherein M1 and M2 are predefined.

4. (previously presented) A method according to claim 2, wherein the searching further comprises searching within a spatially bounded region of the reference video fields/frames about the corresponding position within the reference fields/frames as the test sub-field/frame element takes within the test video field/frame.

5. (previously presented) A method according to claim 4, wherein the spatial bound of the search region is predefined.

6. (previously presented) A method according to claim 1, wherein the matching further comprises, for a sub-field/frame element of the test video field/frame:

defining a matching template comprising a portion of the test video field/frame including the sub-field/frame element; and

using the defined matching template to search for matching sub-field/frame elements in the at least one reference video field/frame.

7. (previously presented) A method according to claim 1, wherein the matching further comprises calculating one or more matching statistic values and/or matching vectors; and

wherein the generating generates the video quality parameter in further dependence on the calculated matching statistic values and/or matching vectors.

8. (previously presented) A method according to claim 7, wherein the calculating comprises:

constructing one or more histograms relating to the searched area(s) of the reference video field(s)/frame(s); and

calculating a matching statistic value for each histogram relating to the proportion of matched elements which contribute to the peak of the histogram.

9. (previously presented) A method according to claim 1, wherein the generating further comprises:

calculating a plurality of video characteristic values respectively relating to characteristics of the test and/or reference video fields/frames in dependence on the matched sub-field/frame elements of the test and reference video fields/frames; and

integrating at least the calculated video characteristic values together to give the video quality value.

10. (previously presented) A method according to claim 9, wherein the matching further comprises calculating one or more matching statistic values and/or matching vectors; and wherein the generating generates the video quality parameter in further dependence on the calculated matching statistic values and/or matching vectors; and wherein the integrating further

includes integrating the matching statistic value (s) with the calculated video characteristic values to give the video quality value.

11. (previously presented) A method according to claim 9, wherein the video characteristic values are respectively any two or more of the following values: one or more spatial frequency values; one or more texture values; at least one edge value; at least one luminance signal to noise ratio value; and/or one or more chrominance signal to noise ratio values.

12. (original) A method according to claim 11, wherein the calculation of the edge value comprises, for a test field/frame:

counting a number of edges in each sub-field/frame element of the test field/frame;

counting a number of edges in each sub-field/frame element of the at least one reference field/frame matched to the sub-field/frame elements of the test field/frame; and

determining an edge value for the test field/frame in dependence on the respective counts.

13. (previously presented) A method according to claim 12, wherein the determining further comprises:

calculating difference values between each pair of respective counts;

putting each calculated difference value to the power Q;

summing the resulting values to give a sum value; and

putting the sum value to the power 1/Q to give the edge value.

14. (previously presented) A method according to claim 9, wherein the integrating further comprises weighting each value by a predetermined weighting factor; and summing the weighted values to give the video quality value.

15. (original) A method according to claim 14, wherein the summing is further arranged to sum the weighted values with a predetermined offset value.

16. (previously presented) A method according to claim 14, wherein the weighting factors and the offset value are dependent on the type of the test and reference video fields/frames.

17. (currently amended) A non-transitory computer readable storage medium storing at least one computer program which upon execution by a computer system performs a video quality assessment method, the method comprising:

matching sub-field/frame elements of a test video field/frame with corresponding sub-field/frame elements of at least one reference video field/frame, and thereby generating for the test video field/frame a matched reference field/frame comprising the sub-field/frame elements of the at least one reference video field/frame which match to the sub-field/frame elements of the test video field/frame;

shifting, by execution of the computer system, relative to the matched reference field/frame at least one of the matching sub-field/frame elements to compensate for misalignment between at least one of the sub-field/frame elements of the test video field/frame and the at least one matching sub-field/frame elements; and generating a video quality value in

dependence on the matched sub-field/frame elements of the test and matched reference video fields/frames so as to reduce the adverse effects of sub-field/frame misalignments between the reference and test field/frames.

18. (canceled)

19. (canceled)

20. (previously presented) A system for video quality assessment, comprising:

matching means for matching sub-field/frame elements of a test video field/frame with corresponding sub-field/frame elements of at least one reference video field/frame, and thereby generating for the test video field/frame a matched reference field/frame comprising the sub-field/frame elements of the at least one reference video field/frame which match to the sub-field/frame elements of the test video field/frame;

shifting means for shifting relative to the matched reference field/frame at least one of the matching sub-field/frame elements to compensate for misalignment between at least one of the sub-field/frame elements of the test video field/frame and the at least one matching sub-field/frame elements of the at least one reference video field/frame; and

video processing means arranged in use to generate a video quality value in dependence on the matched sub-field/frame elements of the test and matched reference video fields/frames so as to reduce the adverse effects of sub-field/frame misalignments between the reference and test field/frames.

21. (original) A system according to claim 20, wherein the matching means further comprises, temporal searching means arranged in use to search for a matching sub-field/frame element within M1 preceding and/or M2 succeeding reference video fields/frames to a temporally corresponding reference video field/frame to the test video field/frame.

22. (original) A system according to claim 21, wherein M1 and M2 are predefined.

23. (previously presented) A system according to claim 21, and further comprising spatial searching means arranged in use to search within a spatially bounded region of the reference video fields/frames about the corresponding position within the reference fields/frames as the test sub-field/frame element takes within the test video field/frame.

24. (previously presented) A system according to claim 23, wherein the spatial bound of the search region is predefined.

25. (previously presented) A system according to claim 20, wherein the matching means further comprises:

means for defining a matching template comprising a portion of the test video field/frame including the sub-field/frame element; and

means for using the defined matching template to search for matching sub-field/frame elements in the at least one reference video field/frame.

26. (previously presented) A system according to claim 20, wherein the matching means further comprises calculating means arranged in use to calculate one or more matching statistic values and/or matching vectors; and wherein the video processing means is further arranged in use to generate the video quality parameter in further dependence on the calculated matching statistic values and/or matching vectors.

27. (original) A system according to claim 26, wherein the calculating means further comprises:

histogram constructing means arranged in use to construct one or more histograms relating to the searched area (s) of the reference video field(s)/frame(s); and

matching statistic calculating means for calculating a matching statistic value for each histogram relating to the proportion of matched elements which contribute to the peak of the histogram.

28. (previously presented) A system according to claim 20, wherein the video processing means further comprises:

a plurality of analysis means respectively arranged in use to calculate a plurality of video characteristic values respectively relating to characteristics of the test and/or reference video fields/frames in dependence on the matched sub-field/frame elements of the test and reference video fields/frames; and

an integration means for integrating at least the calculated video characteristic values together to give the video quality value.

29. (previously presented) A system according to claim 28, wherein the matching means further comprises calculating means arranged in use to calculate one or more matching statistic values and/or matching vectors; and wherein the video processing means is further arranged in use to generate the video quality parameter in further dependence on the calculated matching statistic values and/or matching vectors; and wherein the integration means is further arranged to integrate the matching statistic value(s) with the calculated video characteristic values to give the video quality value.

30. (previously presented) A system according to claim 28, wherein the video characteristic values are respectively any two or more of the following values: one or more spatial frequency values; one or more texture values; at least one edge value; at least one luminance signal to noise ratio value; and/or one or more chrominance signal to noise ratio values.

31. (original) A system according to claim 30, and further comprising edge calculation means comprising:

means for counting a number of edges in each sub-field/frame element of the test field/frame;

means for counting a number of edges in each sub-field/frame element of the at least one reference field/frame matched to the sub-field/frame elements of the test field/frame; and

means for determining an edge value for the test field/frame in dependence on the respective counts.

32. (original) A system according to claim 31, wherein the means for determining further comprises an arithmetic calculator means arranged in use to:

calculate difference values between each pair of respective counts;

put each calculated difference value to the power Q;

sum the resulting values to give a sum value; and

put the sum value to the power 1/Q to give the edge value.

33. (previously presented) A system according to claim 28, wherein the integrating means further comprises weighting means for weighting each value by a predetermined weighting factor; and summing means for summing the weighted values to give the video quality value.

34. (original) A system according to claim 33, wherein the summing means is further arranged to sum the weighted values with a predetermined offset value.

35. (previously presented) A system according to claim 33, wherein the weighting factors and the offset value are dependent on the type of the test and reference video fields/frames.

36. (currently amended) A non-transitory computer readable storage medium according to claim 17, wherein the matching further comprises, for a sub-field/frame element of the test video field/frame, searching for a matching sub-field/frame element within M1 preceding and/or

M2 succeeding reference video fields/frames to a temporally corresponding reference video field/frame to the test video field/frame.

37. (currently amended) A non-transitory computer readable storage medium according to claim 36, wherein M1 and M2 are predefined.

38. (currently amended) A non-transitory computer readable storage medium according to claim 36, wherein the searching further comprises searching within a spatially bounded region of the reference video fields/frames about the corresponding position within the reference fields/frames as the test sub-field/frame element takes within the test video field/frame.

39. (currently amended) A non-transitory computer readable storage medium according to claim 38, wherein the spatial bound of the search region is predefined.

40. (currently amended) A non-transitory computer readable storage medium according to claim 17, wherein the matching further comprises, for a sub-field/frame element of the test video field/frame:

defining a matching template comprising a portion of the test video field/frame including the sub-field/frame element; and

using the defined matching template to search for matching sub-field/frame elements in the at least one reference video field/frame.

41. (currently amended) A non-transitory computer readable storage medium according to claim 17, wherein the matching further comprises calculating one or more matching statistic values and/or matching vectors; and wherein the generating generates the video quality parameter in further dependence on the calculated matching statistic values and/or matching vectors.

42. (currently amended) A non-transitory computer readable storage medium according to claim 41, wherein the calculating comprises:

constructing one or more histograms relating to the searched area (s) of the reference video field(s)/frame (s); and

calculating a matching statistic value for each histogram relating to the proportion of matched elements which contribute to the peak of the histogram.

43. (currently amended) A non-transitory computer readable storage medium according to claim 17, wherein the generating further comprises:

calculating a plurality of video characteristic values respectively relating to characteristics of the test and/or reference video fields/frames in dependence on the matched sub-field/frame elements of the test and reference video fields/frames; and

integrating at least the calculated video characteristic values together to give the video quality value.

44. (currently amended) A non-transitory computer readable storage medium according to claim 43, wherein the matching further comprises calculating one or more matching statistic

values and/or matching vectors; and wherein the generating generates the video quality parameter in further dependence on the calculated matching statistic values and/or matching vectors; and wherein the integrating further includes integrating the matching statistic value (s) with the calculated video characteristic values to give the video quality value.

45. (currently amended) A non-transitory computer readable storage medium according to claim 43, wherein the video characteristic values are respectively any two or more of the following values: one or more spatial frequency values; one or more texture values; at least one edge value ; at least one luminance signal to noise ratio value; and/or one or more chrominance signal to noise ratio values.

46. (currently amended) A non-transitory computer readable storage medium according to claim 45, wherein the calculation of the edge value comprises, for a test field/frame:

counting a number of edges in each sub-field/frame element of the test field/frame;

counting a number of edges in each sub-field/frame element of the at least one reference field/frame matched to the sub-field/frame elements of the test field/frame; and

determining an edge value for the test field/frame in dependence on the respective counts.

47. (currently amended) A non-transitory computer readable storage medium according to claim 46, wherein the determining further comprises:

calculating difference values between each pair of respective counts;

putting each calculated difference value to the power Q;

summing the resulting values to give a sum value ; and putting the sum value to the power 1/Q to give the edge value.

48. (currently amended) A non-transitory computer readable storage medium according to claim 43, wherein the integrating further comprises weighting each value by a predetermined weighting factor; and summing the weighted values to give the video quality value.

49. (currently amended) A non-transitory computer readable storage medium according to claim 48, wherein the summing is further arranged to sum the weighted values with a predetermined offset value.

50. (currently amended) A non-transitory computer readable storage medium according to claim 48, wherein the weighting factors and the offset value are dependent on the type of the test and reference video fields/frames.

51. (new) A method according to claim 1, wherein said positioning includes positioning a plurality of the matching sub-field/frame elements to compensate for misalignments between a plurality of the sub-field/frame elements of the test video field/frame and the plurality of the matching sub-field/frame elements.

52. (new) A non-transitory computer readable storage medium according to claim 17, wherein said positioning includes positioning a plurality of the matching sub-field/frame

elements to compensate for misalignments between a plurality of the sub-field/frame elements of the test video field/frame and the plurality of the matching sub-field/frame elements.

53. (new) A system according to claim 20, wherein the shifting means shifts, relative to the matched reference field/frame, a plurality of the matching sub-field/frame elements to compensate for misalignments between a plurality of the sub-field/frame elements of the test video field/frame and the plurality of matching sub-field/frame elements of the at least one reference video field/frame.